In the Claims:

Please cancel claims 30, 34, 40, 43 and 50 without prejudice or disclaimer.

Please amend the claims to read as follows:

1. (Currently Amended) A process for selectively amplifying nucleic acid sequences comprising contacting multiple single stranded non-circular random oligonucleotide primers (P1), one or more amplification target circles (ATCs), a DNA polymerase and multiple deoxynucleoside triphosphates (dNTP), under conditions promoting said contacting, wherein an ATC hybridizes to a plurality of said P1 primers, wherein said conditions promote replication of the amplification target circle by extension of the P1 primers to form multiple tandem sequence DNA (TS-DNA) products ~~and wherein said dNTPs are selected from the group consisting of dTTP, dCTP, dATP, dGTP, dUTP, a naturally occurring dNTP different from the foregoing, an analog of a dNTP, and a dNTP having a universal base~~ and wherein at least one such dNTP renders the TS-DNA resistant to nuclease activity following incorporation thereinto.

2-4 (Canceled)

5. (Original) The process of claim 1 wherein said multiple primers are within the range of 2 to 50 nucleotides in length.

6. (Original) The process of claim 1 wherein said multiple primers are within the range of 2 to 35 nucleotides in length.

7. (Original) The process of claim 1 wherein said multiple primers are within the range of 2 to 10 nucleotides in length.

8. (Original) The process of claim 1 wherein said multiple primers are hexamers.

9. (Original) The process of claim 1 wherein said multiple primers are octamers.

10. (Canceled)

11. (Original) The process of claim 1 wherein said ATC is a single stranded DNA circle.

12. (Original) The process of claim 1 wherein said ATC is a duplex DNA circle having at least one nick.

13. (Original) The process of claim 1 wherein said ATC is a duplex DNA circle having no nicks.

14. (Original) The process of claim 1 wherein said ATC is a single stranded RNA circle.

15. (Original) The processes of claim 12 or claim 13 further comprising a denaturation step to separate the two strands of the duplex DNA circle.

16-19. (Canceled)

20. (Original) The process of claim 1 wherein said ATC is no larger than about 10,000 nucleotides in size.

21. (Original) The process of claim 1 wherein said ATC is larger than 10,000 nucleotides in size.

22. (Original) The process of claim 1 wherein said ATC is no larger than about 1,000 nucleotides in size.

23. (Original) The process of claim 1 wherein said ATC is no larger than about 100 nucleotides in size.

24. (Original) The method of claim 1 wherein the amplification target circle comprises a single stranded bacteriophage DNA, a double stranded DNA plasmid or other vector, or a clone derived from such a vector.

25. (Original) The method of claim 1 wherein the amplification target circle to be amplified is of unknown sequence composition.

26. (Canceled)

27. (Previously Presented) The process of claim 1 wherein at least one said dNTP is radiolabeled.

28. (Canceled)

29. (Currently Amended) The process of claim 1 wherein said at least one ~~nucleotide~~ said dNTP is a phosphorothioate nucleotide.

30. (Canceled)

31. (Previously Presented) The process of claim 1 wherein said nuclease activity is due to an exonuclease.

32. (Original) The process of claim 31 wherein said exonuclease activity is due to a polymerase having a 3'-5' exonuclease activity.

33. (Original) The process of claim 31 wherein said exonuclease activity is due to an added exonuclease enzyme.

34. (Canceled)

35. (Previously Presented) The process of claim 1 wherein said at least one nucleotide is a modified nucleotide.

36. (Original) The process of claim 1 wherein at least one P1 primer is attached to a solid support.

37. (Original) The process of claim 36 wherein said solid support is made of glass or plastic.

38. (Original) The process of claim 1 wherein said multiple primers are selected from the group consisting of primers resistant to exonuclease activity, primers not resistant to exonuclease activity and a mixture of primers sensitive to exonuclease activity and resistant to exonuclease activity.

39. (Previously Presented) The process of claim 1 wherein said multiple primers are resistant to exonuclease activity.

40. (Canceled)

41. (Original) The process of claim 38 wherein said exonuclease activity is caused by a 3'-5'-exonuclease.

42. (Original) The process of claim 38 wherein said exonuclease activity is caused by a DNA polymerase having 3'-5'-exonuclease activity.

43. (Canceled)

44. (Original) The process of claim 38 wherein each of said exonuclease-resistant primers contains at least one nucleotide making said primer resistant to exonuclease activity.

45. (Original) The process of claim 44 wherein said at least one nucleotide is a modified nucleotide.

46. (Original) The process of claim 45 wherein said modified nucleotide is a 3'-terminal nucleotide.

47. (Original) The process of claim 46 wherein said modified nucleotide is a phosphorothioate nucleotide.

48. (Original) The process of claim 44 wherein each of said exonuclease-resistant primers contains at least two nucleotides making said primer resistant to exonuclease activity.

49. (Original) The process of claim 35 wherein said at least one nucleotide is located at other than the 3'-terminal position.

50. (Canceled)

51. (Original) The process of claim 1 wherein said DNA polymerase is a DNA polymerase having 3',5'-exonuclease activity and is a member selected from the group consisting of bacteriophage $\phi$29 DNA polymerase, Tts DNA polymerase, phage M2 DNA

polymerase, VENT™ DNA polymerase, Klenow fragment of DNA polymerase I, T5 DNA polymerase, PRD1 DNA polymerase, T4 DNA polymerase holoenzyme, T7 native polymerase and Bst DNA polymerase.

52. (Original) The process of claim 1 wherein said DNA polymerase is bacteriophage ϕ29 DNA polymerase.

53. (Original) The process of claim 1 wherein said DNA polymerase is bacteriophage φ-29 DNA polymerase and said multiple primers are resistant to exonuclease activity.

54. (Previously Presented) The process of claim 1 wherein said DNA polymerase is bacteriophage ϕ29 DNA polymerase wherein said multiple primers are resistant to exonuclease activity.

55. (Original) The process of claim 1 wherein said DNA polymerase does not exhibit 3',5'-exonuclease activity.

56. (Currently Amended) The process of claim 55 wherein said DNA polymerase is selected from the group consisting of ~~DNA polymerases lacking a 3'-5' exonuclease activity, such as~~ Taq, Tfl, and Tth DNA polymerase, and Eukaryotic DNA polymerase alpha~~, and DNA polymerases that have been modified to eliminate a 3'-5' exonuclease activity selected from the group consisting of the exo (-) versions of ϕ29 DNA polymerase, Klenow fragment, Vent and Pfu DNA polymerases~~.

57. (Original) The process of claim 1 wherein said DNA polymerase is a reverse transcriptase.

58. (Original) The process of claim 1 wherein said ATC is RNA and said DNA polymerase is a reverse transcriptase.

59. (Previously Presented) The process of claim 38 wherein said multiple primers are a mixture of primers sensitive to exonuclease activity and resistant to exonuclease activity.

60. (Canceled)

61. (Previously Presented) The process of claim 56 wherein said DNA polymerase is $\phi$29 DNA polymerase.

62-68. (Canceled)